

cctctctgtttcgttcctcgtagacgaagaagaagaagaatctcaggttttagctttcga 60
agcttccaaaattttgaattttgatcttctgtggctcttttgtaaactcagactgaagatat 120
ttagattaccagaagttgttcaaggaatgggttcagtggaacagcacggaagataaaaag 180
agactttttttccagattttgctgatccaaaatctgaatagttgttcatgttcttgat 240
caaactctggaaagaggaagtttgttggtatctagaagaagataacaatgttggtattctcta 300

1 M L D S L
gtgtcgaaactgccttcgttatcgacatctgatcacgcttctgtggttgcttgaatctc 360
6 V S K L P S L S T S D H A S V V A L N L
tttgttgcaacttctttgtgcttgtattgttcttgggtcatcttttggaagagaatagatgg 420
26 F V A L L C A C I V L G H L L E E N R W
atgaacgaatccatcacgccttgttgattgggctaggcactgggtgttaccattttgttg 480
46 M N E S I T A L L I G L G T G V T I L L
attagtaaaaggaaaaagctcgcatcttctcgtcttttagtgaagatcttttcttcatatat 540
66 I S K G K S S H L L V F S E D L F F I Y
cttttgccacccattatattcaatgcagggttcaagtaaaaaagaagcagtttttccgc 600
86 L L P P I I F N A G F Q V K K K Q F F R
aatttcgtgactattatgcttttgggtgctgttgggactattatttcttgcaaatcata 660
106 N F V T I M L F G A V G T I I S C T I I
tctctaggtgtaacacagttctttaagaagttggacattggaacctttgacttgggtgat 720
126 S L G V T Q F F K K L D I G T F D L G D
tatcttgctattgggtgccatatttgcgtgcaacagattcagtatgtacactgcaggttctg 780
146 Y L A I G A I F A A T D S V C T L Q V L
aatcaagacgagacacctttgctttacagtcttgtattcggagaggggtgttgtgaatgat 840
166 N Q D E T P L L Y S L V F G E G V V N D
gcaacgtcagttgtggtcttcaacgcgattcagagctttgatctcactcacctaaaccac 900
186 A T S V V V F N A I Q S F D L T H L N H
gaagctgcttttcatcttcttggaaacttcttgtatttgttctcctaagtaccttgctt 960
206 E A A F H L L G N F L Y L F L L S T L L
gggtgctgcaaccgggtctgataagtgcgatgttatcaagaagctatactttggaaggcac 1020
226 G A A T G L I S A Y V I K K L Y F G R H
tcaactgaccgagaggttgcccttatgatgcttatggcgtatctttcttatatgcttgct 1080
246 S T D R E V A L M M L M A Y L S Y M L A
gagcttttgcacttgagcgggtatcctcactgtgttttctgtggtattgtgatgtcccat 1140
266 E L F D L S G I L T V F F C G I V M S H
tacacatggcacaatgtaacggagagctcaagaataacaacaagcatacctttgcaact 1200
286 Y T W H N V T E S S R I T T K H T F A T
ttgtcatttcttgcggagacatttattttcttgtatgttggaatggatgccttggaactt 1260
306 L S F L A E T F I F L Y V G M D A L D I
gacaagtgagatccgtgagtgacacaccgggaacatcgatcgagtgagctcaatccta 1320
326 D K W R S V S D T P G T S I A V S S I L
atgggtctggtcatggttgaagagcagcgttcgtctttccgttatcggttctatctaac 1380
346 M G L V M V G R A A F V F P L S F L S N
ttagccaagaagaatcaaagcgagaaaatcaactttaacatgcaggttgtgatttgggtgg 1440
366 L A K K N Q S E K I N F N M Q V V I W W
tctggtctcatgagaggtgctgtatctatggctcttgcatacaacaagtttacaagggcc 1500
386 S G L M R G A V S M A L A Y N K F T R A
gggcacacagatgtacgcgggaatgcaatcatgatcacgagtacgataactgtctgtctt 1560
406 G H T D V R G N A I M I T S T I T V C L

Figure 1a (continued on next page)


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tcttcgtttgcgattggtgttttcaaaatcgacgaaatcgaaaacattatcgagtgaaaa 60
atgagtatcggtattaacagagtttgtgacgaataaaactagcagctgagcatcctcaggtg 120
1  M S I G L T E F V T N K L A A E H P Q V
ataccaatctcagtggttcacgcgcattctctgtctatgttttagttatcggccacttgctt 180
21  I P I S V F I A I L C L C L V I G H L L
gaagagaatcgatgggttaaatgaatctattaccgccatttttagtaggagcagcatcagga 240
41  E E N R W V N E S I T A I L V G A A S G
acagtgatcttacttattagtaaaggaaaaagttcacatatattttggtgtttgatgaagaa 300
61  T V I L L I S K G K S S H I L V F D E E
ctcttcttcatttaccttcttccccaataatcttcaatgctgggttccaagttaagaaa 360
81  L F F I Y L L P P I I F N A G F Q V K K
aagaagttttttcacaaactttttaaccatcatgtcctttggtgtgattggagttttcatc 420
101 K K F F H N F L T I M S F G V I G V F I
tccactgtcattatctcgtttgggacttggtggctgtttcccaagttgggatttaagggg 480
121 S T V I I S F G T W W L F P K L G F K G
ttgagtgttagagactatcttgccataggaacgattttctcatcaactgatactgtttgc 540
141 L S A R D Y L A I G T I F S S T D T V C
actctacagattctccatcaagatgaaacaccattgctatacagcttagtctttggagaa 600
161 T L Q I L H Q D E T P L L Y S L V F G E
ggagtgggtgaatgatgcaacctcagttgtactgttcaacgccgtgcaaaagattcaattt 660
181 G V V N D A T S V V L F N A V Q K I Q F
gaaagcctaaccgggttgacggcgctgcaagtattttgggaactttttgtacctcttctca 720
201 E S L T G W T A L Q V F G N F L Y L F S
acaagcacacttctcgggaattggtgtggggctaataacatcttttgttcttaaaaccttg 780
221 T S T L L G I G V G L I T S F V L K T L
tattttggaagacattctactacacgcgaactcgccatcatggttctaattggcttacctt 840
241 Y F G R H S T T R E L A I M V L M A Y L
tcatatatgtttggctgagctcttctcattaagtgggaattcttactgttttcttctgtggt 900
261 S Y M L A E L F S L S G I L T V F F C G
gttttaatgtcgcattatgcatcatataacgtgacagagagctcaagaatcacttccagg 960
281 V L M S H Y A S Y N V T E S S R I T S R
catgtatttgcaatgttgctctttattgcgagacattcatatttctgtatgtttggaaca 1020
301 H V F A M L S F I A E T F I F L Y V G T
gatgctcttgattttacaaagtggaagacaagcagcttaagctttgggggtactctgggt 1080
321 D A L D F T K W K T S S L S F G G T L G
gtctccggtgtcataaccgcatttagtattgcttgacgagcagcatttgtctttccactc 1140
341 V S G V I T A L V L L G R A A F V F P L
tcggtcttaacaaatttcatgaacaggcacactgaaagaaacgagtctatcacatttaag 1200
361 S V L T N F M N R H T E R N E S I T F K
catcaggtgatcatttggtgggcaggtctaatacgaggtgctgtctcaattgctctgggt 1260
381 H Q V I I W W A G L M R G A V S I A L A
ttcaagcagttcacatactccggtgttacattggatcctgtgaatgctgccatgggtcacc 1320
401 F K Q F T Y S G V T L D P V N A A M V T
aacaccactatcgttggttctctttactacactgggtctttggtttcctcacaaaaccactt 1380
421 N T T I V V L F T T L V F G F L T K P L
gtgaattatctccttctcaagatgcaagtcacaacaccggaatagaggtaaacgcact 1440
441 V N Y L L P Q D A S H N T G N R G K R T

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Figure 1b (continued on next page)

gagccagggttctccgaaagaagatgcgacacttcctcttctttcctttgacgagtctgct 1500
 461 E P G S P K E D A T L P L L S F D E S A
 tccaccaacttcaatagagctagagatagtatttcccttctgatggaacaacctgtgtac 1560
 481 S T N F N R A R D S I S L L M E Q P V Y
 accatccaccgctactggagaaagtttgacgacacatacatgaggcctatcttcggtgga 1620
 501 T I H R Y W R K F D D T Y M R P I F G G
 cctcgtcgagaaaaccaaccagaatgctagaattgatccgggttctccgcggggaaatca 1680
 521 P R R E N Q P E C
 tgatgagttagtttttttatagtcaagaaagtaggatagttggtttagctaaaacagtt 1740
 tcttaaagtttttgtaaattgtatacaacaaggttcttctatatacgc 1788

Figure 1b (continued)

658720-789120

(i)

acaaaagctggagctccaccgcggtggcgccgctctagaactagtggatcccccgggct 60
 2 R A
 geaggaattcgcgccgctcgcccatgtcctccgccgtcatcgattccactatcttct 120
 22 A G I R G R L G H V L R R H R F H Y L P
 gaagccagcggttcgcttctcattgggttaatcgctcgggtatacttgctaatacttccgat 180
 42 E A S G S L L I G L I V G I L A N I S D
 actgagactagcattaggacgtgggttaatttccacgaagagttcttcttcttgttttg 240
 62 T E T S I R T W F N F H E E F F F L F L
 ttgcctcccatcatattccagtcaggtttcagtccttcaacctaaaccattcttttctaac 300
 82 L P P I I F Q S G F S L Q P K P F F S N
 tttggagccattgttacctttgctatcatcggaacttttgcgcttcagttgttactgggt 360
 102 F G A I V T F A I I G T F V A S V V T G
 ggtctgggttatcttggcggtcttatgtatctcatgtataaacttccctttgttgagtgt 420
 122 G L V Y L G G S M Y L M Y K L P F V E C
 cttatgtttggtgcacttatatcagctacggacctgtcactgtactctctatattccag 480
 142 L M F G A L I S A T D P V T V L S I F Q
 gatgtgggcaccgatgttaacctgtatgctttgggtctttggagaatcagttctgaatgat 540
 162 D V G T D V N L Y A L V F G E S V L N D
 gctatggcaatatcattgtacagaacaatgtccttagtaaaccgcccagtcctcgtctggg 600
 182 A M A I S L Y R T M S L V N R Q S S S G
 gaacatttttcatggtggtgatcaggttttttgagactttgctgggtcaatgtcgcaggg 660
 202 E H F S
 gttggggttggtgattcacttcagcttaatatcctcctcgatcctcctatttccta 720

(ii)

ggacttcgagggccatggcatttgcacttgcacttcaataacttcatgatctaccagaggt 60
 3 T R G
 caccggcccaatcatcttttactgcaccacaactattgttgttgcacggttttactaata 120
 23 H G P I I F Y C T T I V V V T V L L I
 ggaggttcgacaggtaaaatggttggagcttttggaggtttaggtgacgatcttgatgac 180
 43 G G S T G K M L E A L E V V G D D L D D
 tccatgtctgaaggcttttgaagagagcgatcatcagtatgtccctcctccttttagcatt 240
 63 S M S E G F E E S D H Q Y V P P P F S I
 ggagcttcatctgacgaggatacatcatcatcaggaagcaggttcaagatgaagctgaag 300
 83 G A S S D E D T S S S G S R F K M K L K
 gagtttcacaaaaccactacatcattcaccgcttggacaaaaactttctgactccgttc 360
 103 E F H K T T T S F T A L D K N F L T P F
 ttcacaactaatagtgagatggagatggagatggggagtagcatggaaaagatgtgtat 420
 123 F T T N S G D G D G D

Figure 1(c)

cgccacgaccctcagggccaggttaagcagcagcaagcggccggcggttggtataactgctt 60
cagattatgatgctcgtgcttttccttcggttctcggccatgtcctccgccgctcatcgattc 120
1 M M L V L S F V L G H V L R R H R F
cactatcttcctgaagccagcggttcgcttctcattggtttaatcgtcggtataacttgct 180
18 H Y L P E A S G S L L I G L I V G I L A
aatatctccgatactgagactagcattagtagcgtggtttaatttccacgaagagttcttc 240
38 N I S D T E T S I R T W F N F H E E F F
ttcttggttttggctcctcccatcatattccagtcaggtttcagtccttcaacctaaacca 300
58 F L F L L P P I I F Q S G F S L Q P K P
ttcttttctaactttggagccattgttacctttgctatcatcggaacttttgctcgcttca 360
78 F F S N F G A I V T F A I I G T F V A S
gttggttactgggtggtctggtttatcttgccggctctatgtatctcatgtataaacttccc 420
98 V V T G G L V Y L G G S M Y L M Y K L P
tttggttgagtgtcttatgtttggtgcacttatatcagctacggaccctgtcactgtactc 480
118 F V E C L M F G A L I S A T D P V T V L
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138 S I F Q D V G T D V N L Y A L V F G E S
gttctgaatgatgctatggcaatatcattgtacagaacaatgtccttagtaaaccgccag 600
158 V L N D A M A I S L Y R T M S L V N R Q
tcctcgtctggggaacattttttcatggtggtgatcaggttttttgagacttttgctggc 660
178 S S S G E H F F M V V I R F F E T F A G
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198 S M S A G V G V G F T S A L L F K Y A G
ttggacaccgagaatcttcagaacttggtggtgtctctttgtacttttcccgtatttt 780
218 L D T E N L Q N L E C C L F V L F P Y F
tcatacatgcttgagaaggtggttgggtctctccggcattgtttctataactcttcacagga 840
238 S Y M L A E G V G L S G I V S I L F T G
attggttatgaagcgctacactttctcaaactctctcagaagcttcacagagtttcgtatct 900
258 I V M K R Y T F S N L S E A S Q S F V S
tctttttttcacttgatactcttcgctagcagaaactttcacgttcatttacatgggattt 960
278 S F F H L I S S L A E T F T F I Y M G F
gatattgccatggagcagcatagctggtcccatggttgggtttatccttttctctattgta 1020
298 D I A M E Q H S W S H V G F I L F S I V
tcctcatttactgatcgtcagtgattgtatgcagtggtgtcaatgtattttgggtgtgca 1080
318 S S F T D R Q *
tatttggtcaacctatttagacaggagaaccagaagatacctatgaagcaccaaaaagcc 1140
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gtaagattaacactgggttgattttacctctcgcaaaatgccactataaagttgacgatt 1680
tcc 1683

Figure 1d

1 cagggccaggttaagcagcagcaagcggccggcggttggtatactgcttcagattatgatg 60
 1 ctcgtgcttttccttcggttctcggccatgtcctccgccgtcatcgattccactatcttcct M M 120
 3 L V L S F V L G H V L R R H R F H Y L P
 gaagccagcgggttcgcttctcattgggttaatcgtcggtatacttgctaataatctccgat 180
 23 E A S G S L L I G L I V G I L A N I S D
 actgagactagcattaggacgtgggttaatttccacgaagagttcttcttctgtttttg 240
 43 T E T S I R T W F N F H E E F F F L F L
 ttgcctcccatcatattccagtcaggtttcagtccttcaacctaaaccattcttttctaac 300
 63 L P P I I F Q S G F S L Q P K P F F S N
 tttggagccattggttacctttgctatcatcggaacttttgctcgcttcagttgttactgg 360
 83 F G A I V T F A I I G T F V A S V V T G
 ggtctggtttatcttgccggctctatgtatctcatgtataaacttccctttgttgagtgt 420
 103 G L V Y L G G S M Y L M Y K L P F V E C
 cttatggtttggtgcacttatatcagctacggaccctgtcactgtactctctatattccag 480
 123 L M F G A L I S A T D P V T V L S I F Q
 gatgtgggcaccgatgttaacctgtatgctttgggtctttggagaatcagttctgaatgat 540
 143 D V G T D V N L Y A L V F G E S V L N D
 gctatggcaatatcattgtacagaacaatgtccttagtaaaccgccagtcctcgctctggg 600
 163 A M A I S L Y R T M S L V N R Q S S S G
 gaacattttttcatggtggtgatcaggttttttgagacttttgctggctcaatgtctgca 660
 183 E H F F M V V I R F F E T F A G S M S A
 ggggtttgggttgattcacttcagctttaatatccttccctcgaatcctctatttttctt 720
 203 G V G V G F T S A L I S F L E S S I F L
 attagatgtcacatggccaaaatgtattgtaaaatcttaactcagaacacctctttaag 780
 223 I R C H M A K N V L *
 tatgcaggattggacaccgagaatcttcagaacttgagtggtgtctctttgtacttttc 840
 ccgtatttttcgtaagtagacaaaacaactctcctcctgtctcttcgtaatttatgacaac 900
 acttcttccccctaattgtattctggttattctgtaagatacatgcttgacagaaggtgttg 960
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 tgtctatgtaagattaacactgggttgattttacctctcgcaaaatgccactataaagtt 2100
 gacgattttccaagacatttcga 2122

Figure 1e

AtNHX1	-----	-----	-----MLDSI	VSKLPSLSTS	DHA-----
ScNHX1	MLSKVLLNIA	FKVLLTT---	AKRAVDPDDD	DELLPSPDLP	GSDDPIAG--
HsNHE6	MARRGWRRAP	LRRGVGSSPR	ARRLMRPLWL	LLAVGVFDWA	GASDGGGGEA
CeNHE1	-----	-----	-----MKVESL	FFMSQTFDVI	TKN-----
AtNHX1	----SVVALN	-----	-----IFVAL	DCACIVLGHL	LEENR--WEN
ScNHX1	---DPDVDLN	PVTEEMFS--	SWALFIMILL	LISALWSSYY	LTQKRIRAVH
HsNHE6	RAMDEEIVSE	KQAEESHROD	SANLLIFILL	LTTLTILTIWL	FKHRRARFLE
CeNHE1	----KTIVKE	PPD-----	-----YLM	LEVKPE----	-----G
AtNHX1	ESITAILIGL	GTCTILLIS	-KGKSS----	-----	--HLLVFESE
ScNHX1	EVLSIFYGM	VICLIIRMSF	GHIQDQTV--	-----	-----TENSS
HsNHE6	ETGLAMIIYGL	LVGLVIRYGI	-HVPSDVNNV	TLSCEVQSSP	TLLLVTFDPE
CeNHE1	GERVSFHYEL	IEGFFADKRR	-KIEQQIEQK	S-----	-----VESPE
AtNHX1	IFFIYLLPPI	IFNAGFOVKK	KOFFRNEFTI	MLEGAVGTII	SCTIISLGVF
ScNHX1	YFENVLLPPI	IINSGYELNO	VNFFNNILSI	LIEAIPGTFI	SAVVICITFI
HsNHE6	VFFNILLPPI	IFYAGYSLKR	RFFERNLCSI	LAYAFITGTI	SCFVIGSIVY
CeNHE1	VFFNMLIPPI	IFNAGYSLKK	RFFERNIGSI	LAIVFITGTI	SCFGTCCLME
AtNHX1	QEFKKLDIG-	----TEDLGD	YLAIGALFAA	TDSVCTLOVL	NODETPL-LY
ScNHX1	ITFLGLES-	---IDISEAD	AMSVGATISA	TDPVTILSIF	NAYKVDPKLY
HsNHE6	GCVTLMKVTG	QLAGDEYETD	CLLFGAIVSA	TDPVTVLATF	HELOVDVELY
CeNHE1	VETSIQMG-	----YSEKE	LLFFGALISA	TDPVTILSIF	NOMNVEADLE
AtNHX1	SLVFEGGVN	DATSVVVFNA	IOSFDLT---	--HLNHEAAF	HLLGNFLYTF
ScNHX1	TDFGESILN	DAISIVMFET	COKEHGQ---	--PATFSSVF	EGAGLFMTF
HsNHE6	ALIFGESVLN	DAVAIVLSSS	IVAYQAGDN	SHTFDVTAMF	KSIGIFLGIF
CeNHE1	ALIFGESALN	DAVAIVLSEV	IENFSTS---	SEAITLQDFG	SATAGFAGVF
AtNHX1	LLSTELGAAT	GLISAYVIKK	LYFGRHSTDR	EVALMMLMAY	LSYMLAELFD
ScNHX1	SVSLLIGVLI	GILVALLKH	THIR-RYPQI	ESCLILLIAY	ESYFFSNGCH
HsNHE6	SGSFAMGAAT	GVVTALVTKF	TKER-EFQLL	ETGLFFLMST	STETAEAWG
CeNHE1	FGSLMLGFMI	GCMNAFLTKM	TLIS-EHALL	ESSLFVLISY	ISFLVAEVCG
AtNHX1	ISGILTVFFC	GIVMSHYTWE	NVTESSRITT	KHTEATLSEL	AETFIELYVG
ScNHX1	MSGIVSLFC	GITLKHAYY	NYSRRSQITI	KYIFQLIARL	SENFIFIYIG
HsNHE6	FLGVAVLFC	GITOAHYTYN	NISTESQHRT	KOLFELLNEL	AENFIESYVG
CeNHE1	LAGIVSVLFC	GIAQAHYTYN	NLSDESQSNT	KHFEHMYSET	MESFIFCYIG
AtNHX1	MDALDIDKWR	SVSDTPGTSI	AVSSILMGLV	MYGRAAFVVP	LSFLSNIAKT
ScNHX1	EE-----L	FTEVELVYKP	LLITVAATSI	CVARWCAMVP	LSQFYNWIYR
HsNHE6	ET-----L	ETFQNHVENP	TFVYGAFVAI	FEGRAANLVP	LSLLENLGRR
CeNHE1	VS-----V	FVTNNQRWSF	SFLFSLTSI	TASRALFVVP	LSWLLNIRRR
AtNHX1	NQ-----	-----SEK	INENMQVVIV	WSGLMRGAVS	MALAYNKFTR
ScNHX1	VKTIRMSGI	TGENISVPDE	IPYNYOMMTF	WAGL-RGAVG	VALA-----
HsNHE6	SK-----	-----	IGSNEQHMM	EAGL-RGAMA	FALA-----
CeNHE1	PK-----	-----	IPKRYQHMLL	EAGL-RGAMA	FALA-----

Figure 2a (continued on next page)

AtNHX1	AGHTDVRGNA	IMITSTITVC	LFSTVWFGML	TKPLISYLLP	HQNATTSMLS
ScNHX1	LGIOGEY-KF	TLLATVLVVV	VLTVIIFGCT	TAGMLEVLNI	KTGCISEEDT
HsNHE6	IRDTATYARQ	MMFSTTLLIV	FFTVWVFGGG	TTAMLSCLHI	RVCVDSDOEH
CeNHE1	GRNTSTENRQ	MIFATTTAVV	IVTVLVNGGL	TSWMIDYLOI	KHGKDAIEEG
AtNHX1	D---DNTPKS	IHIP-----	-----LLDQ	DSFIEPSG--	-----
ScNHX1	S---EDEFD	IEAP-----	--RAINLLNG	SSIQTDLG--	-----P
HsNHE6	LGVPENERRT	TKAESAWLFR	MWYNFDHNYL	KPLLTHSGPP	LTTTLPACCG
CeNHE1	Q-RLENSMSS	SPAD-----	--QHSDDDES	VPVTMSPG--	-----LN
AtNHX1	-NHNVPRPDS	IRGELTRPTR	TVHYYWRQFD	DSFMRPVFVG	RGEVPPFVPGS
ScNHX1	YSDNNSPDIS	IDQFAVSSNK	NLPNNISTTG	GNTFGGLNET	ENTSPNPARS
HsNHE6	PIARCLTSPQ	AYENQEQDK	DDSDLILNDG	DISLTYGDST	VNTEPATSSA
CeNHE1	PWDKAFLPRK	WYHEDARWQL	LK--LVFQFH	ETSTDPCDAI	FGTNTPTVLS
AtNHX1	PTERNPPDLS	KA-----	-----	-----	-----
ScNHX1	SMDKRNLRDK	LGTIFNSDSQ	WFQNFDEQVL	KPVFLDNVSP	SLQDSATQSP
HsNHE6	PRRFMGNSSE	DALDRELAFG	DHELVIRGTR	LVLPMDDSEP	PLNLLDNTRH
CeNHE1	SIDFLVDFKP	STRVRQCRAL	QYNCTIRDSI	D-----	-----
AtNHX1	-----				
ScNHX1	ADFSSQNH				
HsNHE6	GPA-----				
CeNHE1	-----				

Figure 2a (continued)

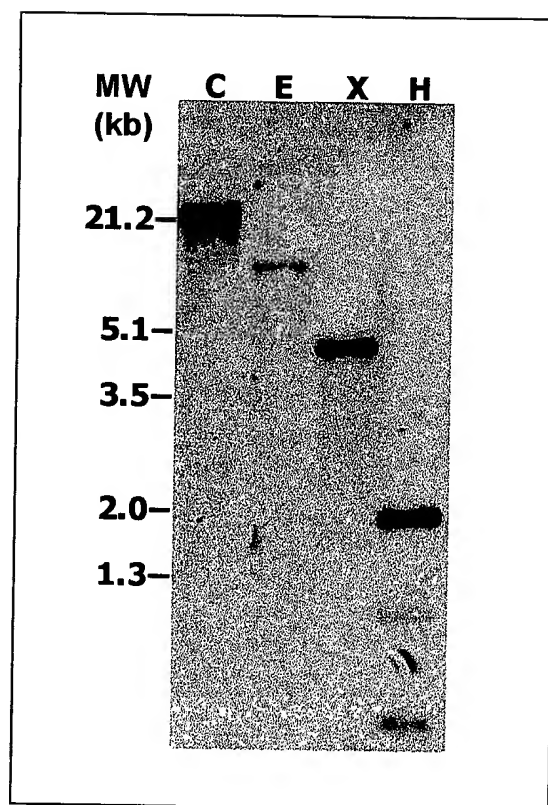
AtNHX1	MLDSLVSCLP	SLSTSDHASV	VALNLFVALL	CACIVLGHLL	EENR--WVNE
AtNHX2	MSIGLTFEFT	NKLAAEHPOV	IPISVFIAIL	CLCLVIGHLL	EENR--WVNE
AtNHX3	-----	-----	-----MML	VLSFVLGHVL	RRHRFHYLPE
AtNHX1	SITALLIGLG	TGVTILLISK	GKSS-HILVF	SEDLFFIYLL	PPIIFNAGFQ
AtNHX2	SITAILVGAA	SGTVILLISK	GKSS-HILVF	DEELFFIYLL	PPIIFNAGFQ
AtNHX3	ASGSLLIGLI	VGILANISDT	ETSIRTWFNF	HEEFFFFLELL	PPIIFQSGFS
AtNHX1	VKKKOFFERNE	VTIMLFGAVG	TIISCTIISL	GVTQFFKKLD	IGTFDLGDYL
AtNHX2	VKKKKFFHNF	LTIMSEFVIG	VFISTVIISF	GTWWLFPKLG	FKGLSARDYL
AtNHX3	LQPKPFESNF	GAIVTEAII	TEVASVVTGG	LVYLGGSMYL	MYKLFPVECL
AtNHX1	AIGAIFAATD	SVCTLOVLNQ	DETPL-LYSL	VFEGGVNDA	TSVVVFNAIQ
AtNHX2	AIGTIFSSTD	TVCTLOILHQ	DETPL-LYSL	VFEGGVNDA	TSVVLFNAAQ
AtNHX3	MEGALISATD	PVTVLSIFQD	VGTDVNLYAL	VFGESVLNDA	MAISLYRTMS
AtNHX1	SFDLTHLNHE	AAFHLLGNFL	YLELLSTLLG	AATGLISAYV	IKKLYFG-RH
AtNHX2	KIQFESLTCW	TALQVFGNFL	YLFSTSTLLG	IGVGLITSEV	IKTLYFG-RH
AtNHX3	LVNROSSSGE	HFFMVVIRFF	ETFAGSMSAG	VGVGFTSALL	FKYAGLDTEN
AtNHX1	STOREVALMM	LMAYLSYMLA	ELFDLSGILT	VFFCGIVMSH	YTHNVTESS
AtNHX2	STRELAIMV	LMAYLSYMLA	ELFSLSGILT	VFFCGVIMSH	YASYNVTESS
AtNHX3	LQNLCCLEFV	LFPYFSYMLA	EGVGLSGIVS	ILFTGIVMKR	YTFSNLSEAS
AtNHX1	RITTKHTFAT	LSFLAETFI	LYVGMD-ALD	IDKWRVSVD	PGTSIAVSSI
AtNHX2	RITSRHVFAM	LSFLAETFI	LYVGTD-ALD	FTKWKTSLS	EGGTLCVSGV
AtNHX3	QSFVSSFHFL	ISSLAETFTF	IYMGFDIAME	QHSWSHVG--	EILFSIVSSF
AtNHX1	LMGLVMVGRA	AFVFPLSFLS	NLAKKNQ--S	EKINENMOVV	IWWSGLMRGA
AtNHX2	ITALVILLGRA	AFVFPLSVLT	NFMNRHTERN	ESITEKHQVI	IWWAGLMRGA
AtNHX3	TDRQ-----	-----	-----	-----	-----
AtNHX1	VSMALAYNKE	TRAGTQVVRG	NAIMITSTIT	VCLFSTVVF	MLTKPLISYL
AtNHX2	VSIALAFKQF	TYSGVTLDPV	NAAMVTNTTI	VVLETTLVFG	FLTKPLVNYL
AtNHX3	-----	-----	-----	-----	-----
AtNHX1	LPHQNAATTSM	LSDDNTPKSI	HIP--LLDQD	SFIEPSGNHN	VPRPDSIRGF
AtNHX2	LPODASHNTG	NRGKRTEPGS	PKEDATLPLL	SEDESASTNF	NRARDSISLL
AtNHX3	-----	-----	-----	-----	-----
AtNHX1	LTRPRTTVHY	YWRFDDSEM	RVFVGGRGFV	PFVPGSPTER	NPPDLKA
AtNHX2	MEQPVYTIHR	YWRKFDDTYM	RPIFGGPRRE	NQPEC-----	-----
AtNHX3	-----	-----	-----	-----	-----

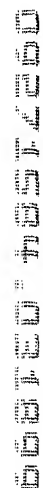
Figure 2b

AtNHX3	MMLVLSFVLG	HVLRRRHRFHY	LPEASGSLLI	GLIVGILANI	SDTETSIRTW
AtNHX4	MMLVLSFVLG	HVLRRRHRFHY	LPEASGSLLI	GLIVGILANI	SDTETSIRTW
AtNHX3	FNFHEEFFFFL	FLLPPIIFQS	GFSLQPKPFF	SNFGAIVTFA	IIGTFVASVV
AtNHX4	FNFHEEFFFFL	FLLPPIIFQS	GFSLQPKPFF	SNFGAIVTFA	IIGTFVASVV
AtNHX3	TGGLVYLGG	MYLMYKLPFV	ECLMFGALIS	ATDPVTVLSI	FQDVGTDVNL
AtNHX4	TGGLVYLGG	MYLMYKLPFV	ECLMFGALIS	ATDPVTVLSI	FQDVGTDVNL
AtNHX3	YALVFGESVL	NDAMAIISLYR	TMSLVNRQSS	SGEHFFMVVI	RFFETFAGSM
AtNHX4	YALVFGESVL	NDAMAIISLYR	TMSLVNRQSS	SGEHFFMVVI	RFFETFAGSM
AtNHX3	SAGVGVGFTS	ALLFKYAGLD	TENLQNLCC	LFVLFPYFSY	MLAEGVGLSG
AtNHX4	SAGVGVGFTS	ALISFLESSI	FLIRCHMAKN	VL-----	-----
AtNHX3	IVSILFTGIV	MKRYTFSNLS	EASQSFVSSF	FHLISSLAET	FTFIYMGFDI
AtNHX4	-----	-----	-----	-----	-----
AtNHX3	AMEQHSWSHV	GFILEFSIVSS	FTDRQ		
AtNHX4	-----	-----	-----		

Figure 2c

Figure 3.





ATGTTGGATTCTCTAGTGTGCGAACTGCCTTCGTTATCGACATCTGATCACGCTTCTGTGG
TTGCGTTGAATCTCTTTGTTGCACTTCTTTGTGCTTGTATTGTTCTTGGTCATCTTTTGAAG
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CCATTTTGTGATTAGTAAAGGAAAAAGCTCGCATCTTCTCGTCTTTAGTGAAGATCTTTT
CTTCATATATCTTTTGCACCCATTATATTCAATGCAGGGTTTCAAGTAAAAAAGAAGCAG
TTTTCCGCAATTTCTGACTATTATGCTTTTGGTGCTGTTGGGACTATTATTTCTTGCAC
AATCATATCTCTAGGTGTAAACACAGTTCCTTAAGAAGTTGGACATTGGAACCTTTGACTTG
GGTGATTATCTTGCTATTGGTGCCATATTGCTGCAACAGATTCAGTATGTACACTGCAGG
TTCTGAATCAAGACGAGACACCTTTGCTTTACAGTCTTGTATTCTGGAGAGGGTGTGTGAA
TGATGCAACGTCAGTTGTGGTCTTCAACGCGATTTCAGAGCTTTGATCTCACTCACCTAAAC
CACGAAGCTGCTTTTCATCTTCTTGGAACTTCTTGTATTGTTTCTCCTAAGTACCTTGCT
TGGTGCTGCAACCGGTCTGATAAGTGCGTATGTTATCAAGAAGCTATACTTTGGAAGGCA
CTCAACTGACCGAGAGGTTGCCCTTATGATGCTTATGGCGTATCTTCTTATATGCTTGCT
GAGCTTTTTCGACTTGAGCGGTATCCTCACTGTGTTTTCTGTGGTATTGTGATGTCCATTA
CACATGGCACAATGTAAACGGAGAGCTCAAGAATAACAACAAAGCATACTTTGCAACTTT
GTCATTTCTTGCGGAGACATTTATTTTCTTGTATGTTGGAATGGATGCCTTGGACATTGAC
AAGTGGAGATCCGTGAGTGACACACCGGGAACATCGATCGCAGTGAGCTCAATCCTAATG
GGTCTGGTCATGGTTGGAAGAGCAGCGTTCGTCTTCCGTTATCGTTTCTATCTAACTTAG
CCAAGAAGAATCAAAGCGAGAAAAATCAACTTTAATGCAGGTTGTGATTGGTGGTCTG
GTCTCATGAGAGGTGCTGTATCTATGGCTCTTGCCATACAACAAGTTACAAGGGCCGGGC
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GCACAGTGGTGTGTTGATGCTGACCAAACCACTCATAAGCTACCTATTACCGCACCAGA
ACGCCACCACGAGCATGTTATCTGATGACAACACCCCAAAATCCATACATATCCCTTTGTT
GGACCAAGACTCGTTCATTGAGCCTTCAGGGAACCAACAATGTGCCTCGGCCTGACAGTAT
ACGTGGCTTCTTGACACGGCCCACTCGGAACCGTGCATTACTAAGTGGAGACAATTTGAT
GACTCTTTCATGCGACCCGCTTTTGAGGGTCTGGGCTTTGTACCCTTTGTTCCAGGTTCTCC
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GATTTTTTTTTGGTAGAAAAGGGTGATTCAAATTATGCTTTTGTGTAAATTATCCATTTGTA
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CAACTTTGAAGTGTTTGATTGATGTATGTAATTATATTATTTGTTTTGTTGTAACACAA
ACTACACATTTGTTTATGTTTTGAATTTGGTTTTTGCTTCGAAAAAAAAAAAAAAAAAAAA

MLDSLVS KLPSLSTSDHASVVALNLFVALLCACIVLGH LLEENRWMNESITALLIGLGTGV TIL
LISKGKSSHLLVSEDLFFTYLLPPIIFNAGFQVKKKQFFRN FVTIMLFGAVGTIISCTIISLGV TQF
FKKLDIGITFDLGDYLAIGAIFAATDSVCTLQVLNQDETP LLYSLVFGEGVVNDATSVVFN AI
QSF DLTHLNHEAAFHLLGNFLYLFL LSTLLGAATGLISAYVIKKLYFGRHSTDREVALMMLMA
YLSYMLAELFDLSGILTVFFCGIVMSHYTWHNVTESSRITTKHIFATLSFLAETFI FLVGM DA
LDIDKWRVSVDTPGTSIAVSSILMGLVMVGRAAFVFLSFLSNLAKKNQSEKINFNMQVVIWW
SGLMRGAVSMALAYNKFTRAGHTDVRGNAIMITSTITVCLFSTVVF GMLTKPLISYLLPHQNA
TTSMLSDDNTPKSIHIPLLDQDSFIEPSGNHNVPRPDSIRGFLTRPTRNRALLTGDNLM T LSCDP
SLEVVALYPLFQVLQLRETLILVRLEGNVEEKL

Figure 5 (a)

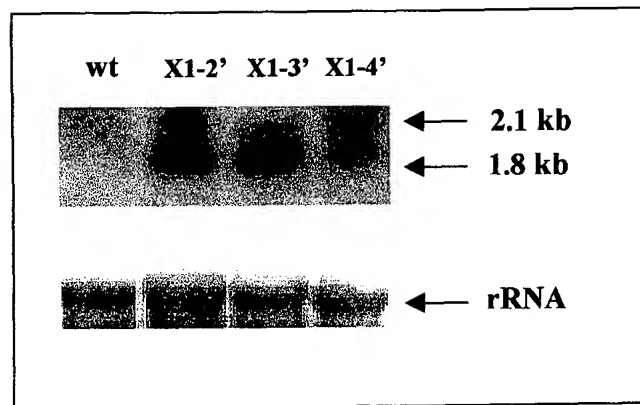
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 ATCCAAATCTGAATAGTTGTTCAATGTTCTTGATCAATCTGMAAGAGAGTTGTTGATCTAGAGAAAGATAACA
 ATGTGATCTCTAGTGTGMAACTGCCCTTGTATCGACATCTGATCAGCTTCTGTGTTGCGTTGATCTTGT 81
 M L D S L V S K L P S L S T S D H A S V V A L N L E V
 GCACCTTCTGTGCTGTATGTTCTTGTGATCTTTTGGMAGMATAGATGATGACGAAATCCATCACCGCTTGTG 162
 A L L C A C I V L G H L L E E N R M M N E S I T A L L
 ATGGGCTAGGCACTGGTGTACCATTTTGTGATTAGTAAAGMAAGCTCGCATCTTCTGCTTAGTGAAGATCTT 243
 I G L G T G V T I L L I S K G K S S H L L V F S E D L
 TTCTCATATATCTTTGGCCACCATTATATTCAMTGCAGGGTTTCMAGTMAAAMAGMAGCATTTTCCGCAATTTG 324
P P I Y L L L P P I I F N A G F Q V K K Q F F R N F V
 ACTATATGCTTTTGTGCTGTGGACTATTAATTTCTTGCACAAATCATATCTCTAGGTGTAACACAGTTCTTAAGAAG 405
 T I M L F G A V G T I I S C T I I S L G V T Q F F K K
 TTGACATTTGAACCTTTGACTTGGGTGATTAATCTTGTATTTGGTCCATATTTGCTGCACACAGATTCAATGTACACTG 486
 L D I G T F D L G D Y L A I G A I F A A T D S V C T L
 CAGTTCTGAATCMAGACGAGACACTTGTCTTACAGTCTTGTATTTGGAGAGGGTGTGTGATGATGCAACGTCAGTT 567
 Q V L N Q D E T P L L Y S L V F G E G V V N D A T S V
 GGTCTTCMAGCGAATTCAGACTTGTATCTACATCACTMAACACGAGCTGTTTCATCTTGTGAACCTTCTTG 648
 V V F N A I Q S F D L T H L N H E A A F H L L G N F L
 TATTTGTTCTCTAAGTACTTGTGTTGCTGCAACCGGTCTGATAGTGGATGTATCAAGAGCTATACTTGA 729
 Y L F L L S T L L G A A T G L I S A Y V I K K L Y F G

Figure 5(b) (continued next page)

AGCACTCAACTGACCGAAGGTTGCCCTATGATGCTTATGGCGTCTTCTTATATGCTTGCTGAGCTTTGACTTG 810
 R H S T D R E V A L M M L M A Y L S Y M L A E L F D L
 AGCGTATCCTCACTGTGTTTCTGTGTAATGTGATGCCATTACACATGGCACATGTAACGAGAGCTCAAGATA 891
 S G I L T V F F C G I V M S H Y T W H N V T E S S R I
 ACACAAAGCATACCTTTCNACTTTGTCATTTCCTGGAGACATTATTCTGTATGTTGAATGATGCCTTGGAC 972
 T T K H T F A T L S F L A E T F I F L Y V G M D A L D
 ATTGACAAGTGGAGATCCGTGAGTGACACACCGGACATCGATCGAGTCAATCCTAATGGGCTGTCATGGTT 1053
 I D K M R S V S D T P G T S I A V S S I L M G L V M V
 GGAGAGCAGCGTTCGTCCTTCGTTATCGTTTCTATCTAAGTCAAGAGATCAAGCGAGAAATCAACTTTAAC 1134
 G R A A E V F P L S F L S N L A K K N Q S E K I N F N
 ATGACAGTTGTAATGGTGTGCTGTCATGAGAGGTGCTGATCTATGCTCTTGATACACAAAGTTTCAAGGCC 1215
 M Q V V I M W S G L M R G A V S M A L A Y N K F T R A
 GGCACACAGATGACCGGGAATGCATCATGATCAGAGTACGATTAAGTGTCTGCTTTTACACAGTGGTGGT 1296
 G H T D V R G N A I M I T S T I T V C L F S T V V F G
 ATGCTGACCAACCACTCATTAAGCTAATTAACCGACCAAGAACGCCACAGCATGTATCTGATGACACACCCCA 1377
 M L T K P L I S Y L L P H Q N A T T S M L S D D N T P
 AMTCCATCATATCCCTTTGTGACCAAGACTGTCATGAGCTTCAGGAAACCAATGTGCTCGGCTGACAGT 1458
 K S I H I P L L D Q D S F I E P S G N H N V P R P D S
 ATACGTGCTTCTGACACGGCCCACTCGMACCGTGCATTAAGTGAAGACATTTGATGACTCTTCAAGCCCG 1539
 I R G F L T R P T R N R A L L T G D N L M T L S C D P
 TCTTGGAGTGTGCTTTGATACCTTTGTTCCAGGTTCTCAACTGAGAGAAACCTCCTGATCTTAAGGCTTGAG 1620
 S L E V V A L Y P L F Q V L Q L R E T L L I L V R L E
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 G N V E E K L *

Figure 5(b) (continued)

Figure 6.



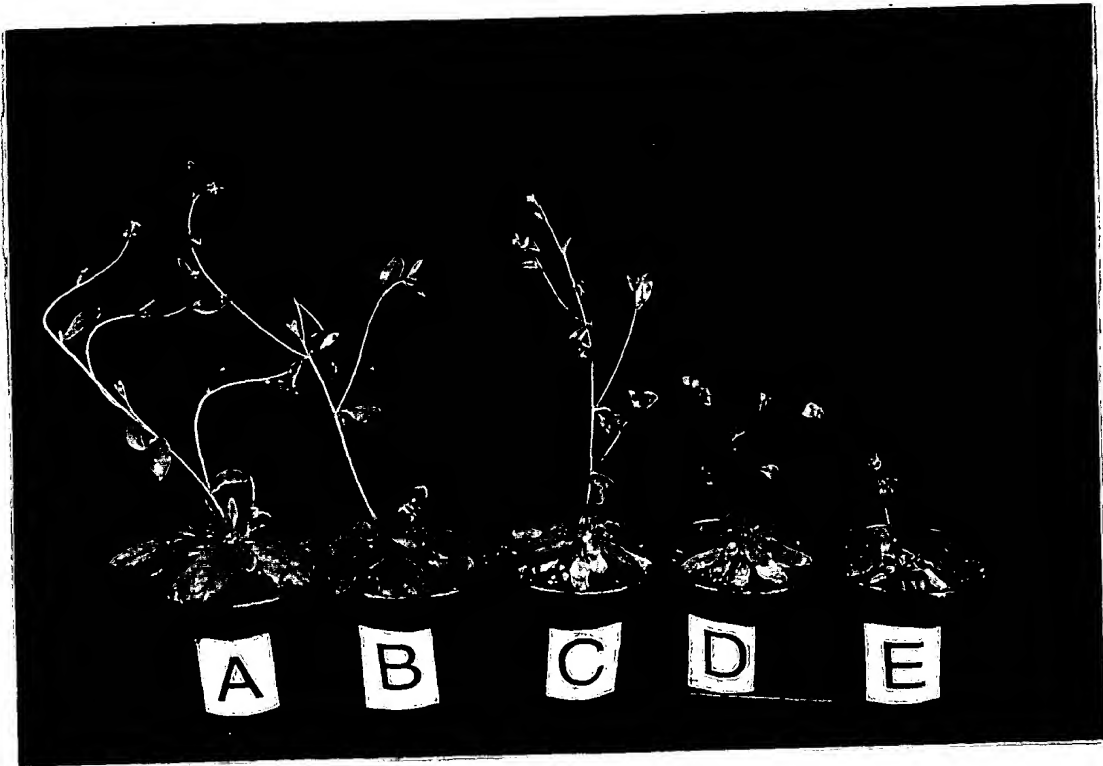


Figure 7(a)

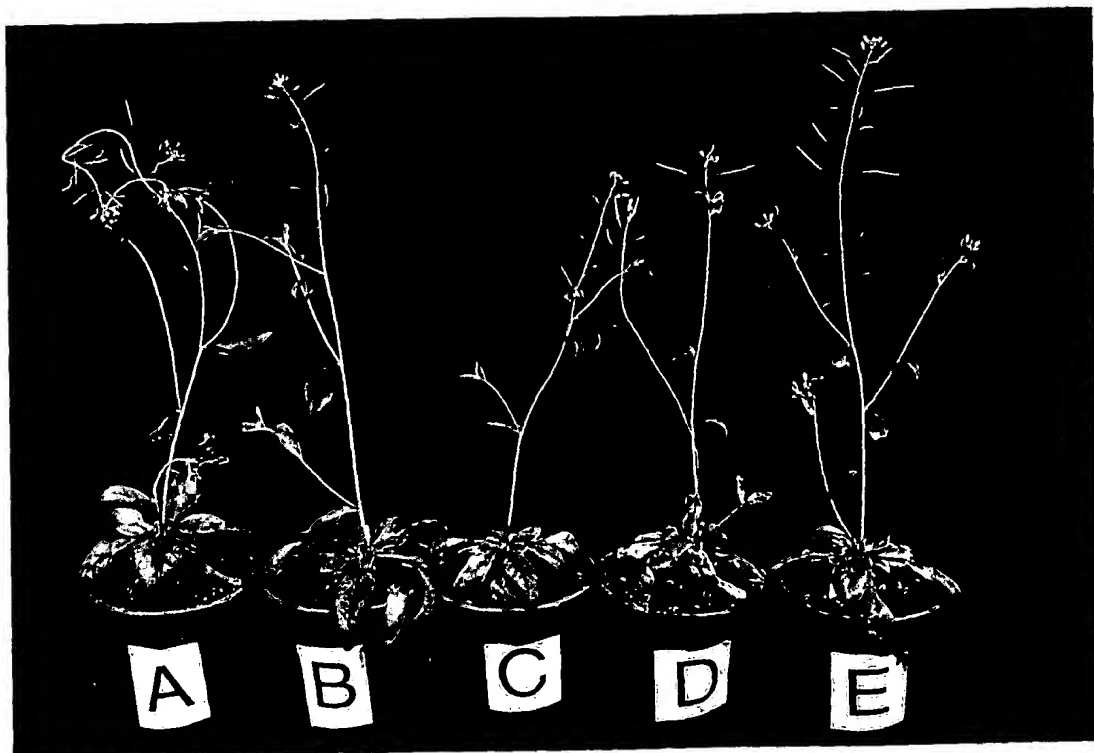


Figure 7(b)

Figure 1 shows five potted plants, labeled A through E, arranged in a row. Each plant is in a white pot with a black label featuring a white letter. The plants are dark green and have varying heights and leaf densities. Plant A is the tallest and most bushy. Plant B is slightly shorter and less dense. Plant C is the shortest and least dense. Plant D is taller than C but less dense than A. Plant E is the tallest and most bushy, similar to A. The background is a solid, light gray.

Figure 7(d)

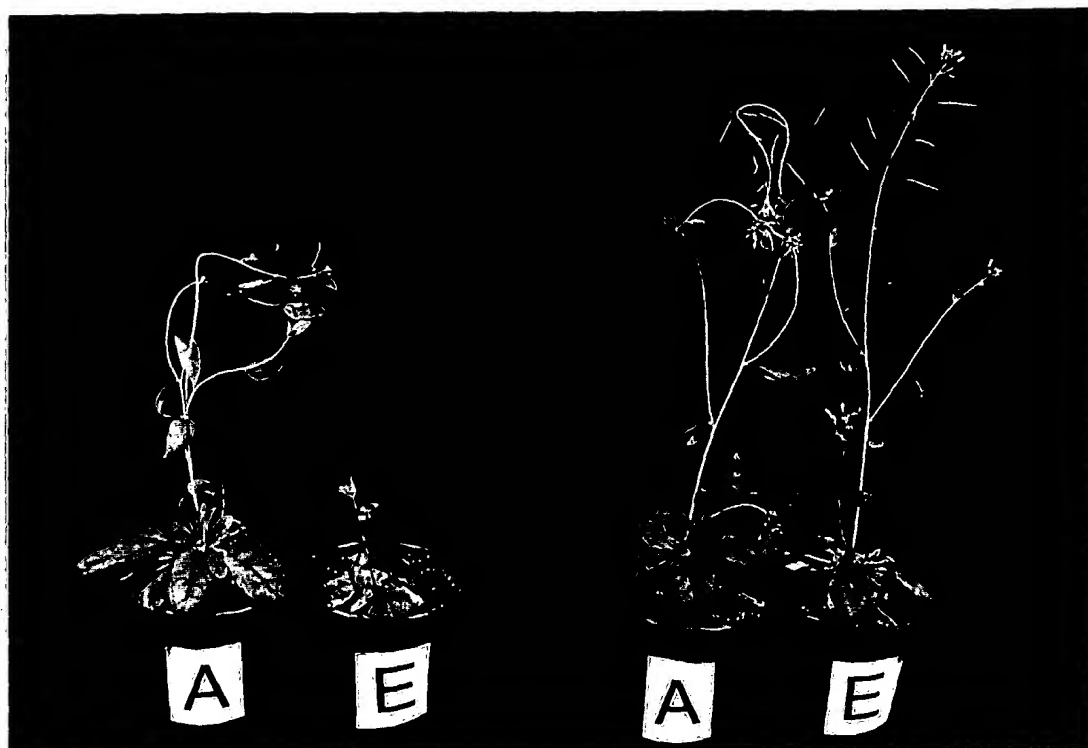


Figure 7(e)

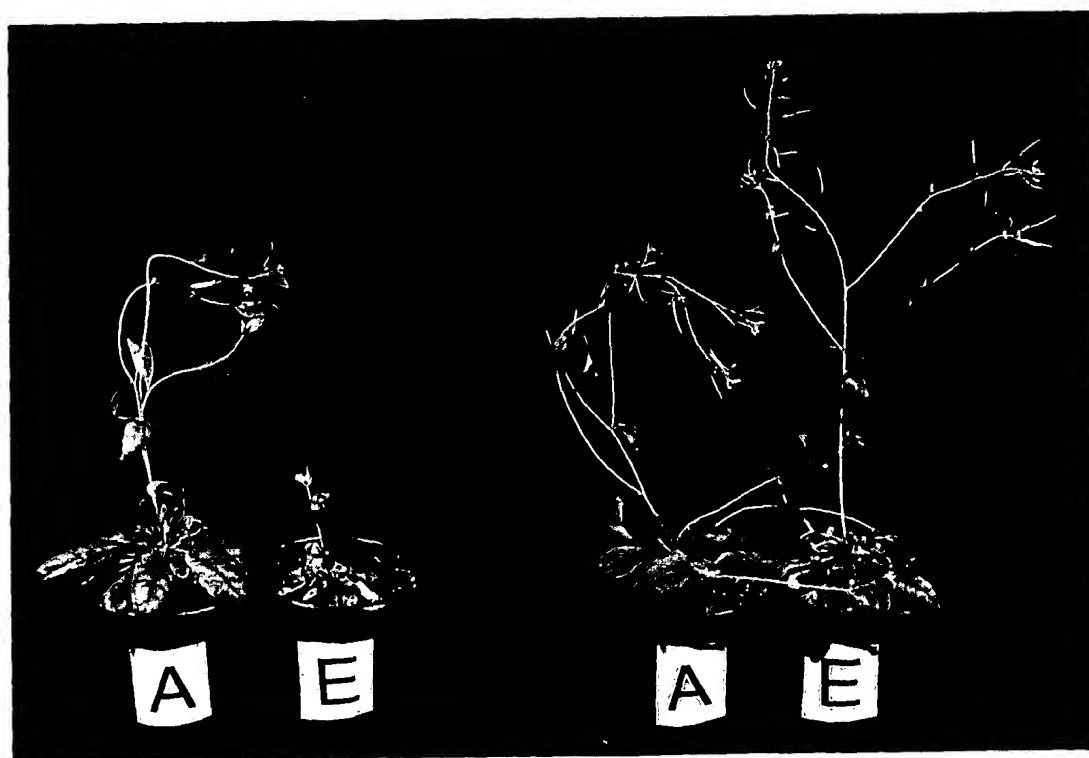


Figure 7(f)



Figure 7(g)

Figure 8(a)

[SEQ ID NO:21]

1 mpdskhwvil lfrrdgdddd ddgqdpalqe lysswalfil lvlligallt syyvqskkir
61 aihetvisvf vgmvvgliir vspgliiqnm vsfhstyffn vllppiilns gyelhqsnff
121 rnigtiltfa fagtffisavt lgvlvyifsf lnfenlsmtf vealsmgatl satdpvtvla
181 ifnsykvdk lytiifgesi lndavaivmf etlqqfqqkt lhfftlfsgl gifiitffis
241 lligvsigli talllkysyl rrypsiesci illmaytsyf fsngchmsgv vsllfcgitl
301 khyaffnmsy kaklstkyvf rvlaqlsenf ifiylgmslf tqvdlvykpi filittvavt
361 asrymnvflp snllnkfhrq rngnlidhip ysyqmmfwa glrgavgval aagfegenaq
421 tlrattlvvv vltliifggg tarmleilhi etgvaadvds dteigmlpwq qspefdlens
481 amelsdasae pvvvdqqftt ehfdegniap tlskkvsstf eqyqraagaf nqffhssrdd
541 qaqlwtrfde evikpvller dnlnkngtkk

Figure 8(b)

[SEQ ID NO:22]

1 mlskvllnia fkvllttakr avdpdddel lpspdlpgsd dpiagdpdvd lnpvteemfs
61 swalfimlll lisalwssyy ltqkriravh etvlsifygm vigliirmsp ghyiqdtvtf
121 nssyffnvll ppiilnsgye lnqvnffnm lsilifaipg tfisavvigi ilyiwtflgl
181 esidisfada msvgatlsat dpvtlsifn aykvdpklyt iifgesllnd aisivmfetc
241 qkfhhgqpatf ssvfegaglf lmtfsvslli gvliligilval llkhthirry pqiesclill
301 iayesyffsn gchmsgivsl lfcgitlkhay aaynmrrsq itikyifql arlsenfifi
361 ylgelleftev elvykpllii vaaisicvar wcavfplsqr vnwiyrvkti rmsggitgen
421 isvpdeipyn yqmmtfwagl rgavgvalal giqgeykftl latvlvvvvl tviifgggta
481 gmlevlnikt gciseedtsd defdieapra inllngssiq tdlgpysdnn spdisidqfa
541 vssknlpnn isttggnftg glntentsp nparssmdkr nlrklgtif nsdsqwfqnf
601 deqvlkpvl dnvpslqds atqspadfss qnh

Figure 8(c)

[SEQ ID NO:23]

1 caagaagcta tacattggaa ggcattctac tgaccgtgag gttgccetta tgatgctcat
61 ggcttacctt tcatatatgc tggctgagtt gctagatttg agcggcattc tcaccgtatt
121 cttctgtggg attgtaatgt cacattacac ttggcataac gtcacagaga gttcaagagt
181 tacaacaaag cacgcatttg caactctgtc cttcattgct gagacttttc tcttctgta
241 tgttgggatg gatgcattgg atattgaaaa atgggagntt nccagtgaac gacctggnaa
301 atccattngg gtaagctcaa ttttgctagg gattgggtcc tgattggaag ngctgctttt
361 gnaattcccc tgggtggtc

Figure 8(d)

[SEQ ID NO:24]

```
1 gtttggtaat tggaggaggt ggagtaatgg agctcgggtt ggggatgggg atggggctgg
61 gcgacccgnc tgcggactac ggctcgatcg cggcgggtggg gatgttcgtg gcgctcatct
121 gcgtctgcat cgtcgtcggc cacctcctcg aggagagccg atggatgaac gagtccatca
181 ccgcgctaata catcgggttg ggtacttgga ggagtgnntt tgnatggtgt cgagctggaa
241 gcactcggna tactggtggt cagcgagg
```

Figure 8(e)

[SEQ ID NO:25]

```
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121 attgtctggc atcaaactat gccagccac tgatggcacg gctcagttta atgaggctgg
181 ccacaccttc tccagtggga gttatctgtg catctaattg gtaccttctt tgtattgtag
241 ttgttacttt acccttgatt tgctcggttt gcttctaaag caggttgtga aattcctatt
301 gtatgtngtg acgcttgttt gttttttgag gctggaaatt acatcatggt tttgatttgt
361 ctattaaaaa aaaaaaaaaa
```

Figure 8(f)

[SEQ ID NO:26]

```
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61 aattagagtc tatccttcog cccatagtct ttgacaccct tttcaaaatt ctagaacaag
121 aattttattc ttcatatata tatatatata tatccaatta accatctcaa tctcatattc
181 acatatacct cataaaccat ccataacatc cttaaaaacc ctctaagccc tttcaaactt
241 tgatttgtaa ttgtttctct tataagtctt aacctgcaca aatcaatttt aatttcttat
301 gttcatatag ttatgaatga ttgaaaaaaa cacaaatgac tccagttatc tgtgagatct
361 ctatgataaa ctctactctc cagacgcagg acacatttag ttcaatcttt ctctgttggt
421 ttcctctact ggttctatat tttctcatga attattaatt aatcctatat tctttctttt
481 caatacaaat ttagtttcat taattctatc aacataatca attaaactac atagttagaa
541 aaatagtact attaccacga tcactcaaag ttttttagtt ttaacaaac antctg
```

Figure 8(g)

[SEQ ID NO:27]

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121 gcgatgatga aacttgatga tcagtttttt tagttgaaaa attctgcaag aacagctact
181 taatgctcta ttgtgtatcg caggcacaca tcagctgctg atgtctgcta tacttctgta
241 ctctcactat agctcatcta tgacgtctag acatgctagc gtatgtgtan nnnacatcgc
301 gctagtatgt atactctcac atcatatgct actgttctat atagaactat gtgatagcta
361 ctgtataact gctgtcatac agagtcccg taaatcaat gctattttgc tttcctcaaa
421 gaaaaaagga aatgactttc cttttgatta tatatttgat ccaggttttc ggcttgctga
481 ctaagcctct gattaatctc ctctgccac caagacctgg ca

Figure 8(h)

[SEQ ID NO:28]

1 tttccgttat cgtttctatc taacttagcc aagaagaatc aaagcgagaa aatcaacttt
61 aacatgcagg ttgtgatttg gtgggtctggt ctcatgagag gtgctgtatc tatggctctt
121 gcatacaaca agtttacaag ggccggggcac acagatgtac gnggggaatgc aatcatgac
181 acnggtacgn taactgtctg tntttttagc acagtgggtg ttggtatgct gaccaaacca
241 ntcataagct acctatttac cgnaccanga accgtcatca acngggcatg tttatcttgn
301 attncaaata acccnaanaa tccnatacca

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